



Docket N . 1962.EEM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Osama M. Musa et al.

Serial No. 09/966,453

Group Art Unit:

Filed: 09/28/01

Examiner:

For: ADHESION PROMOTERS CONTAINING
BENZOTRIAZOLES

INFORMATION DISCLOSURE STATEMENT PURSUANT TO 37 C.F.R. 1.97

Commissioner for Patents
Washington, D. C. 20231

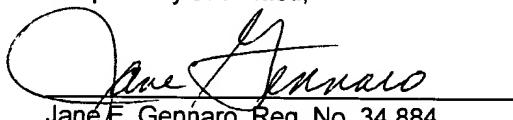
SIR:

In compliance with Applicants' duty of disclosure under 37 C.F.R. 1.56, and in accordance with 37 C.F.R. 1.98, Applicants' direct the Examiner's attention to the publications listed on the PTO #1449 form which is being submitted herewith. Copies of all publications listed on the #1449 form are being submitted herewith.

The disclosure of the above references does not constitute an admission that they are relevant or material to the claims or are "prior art" to the subject application. The citation of them is not to be construed as a representation that no better art exists or that a search has been made; they are cited merely as constituting collectively the closest art of which applicants are aware.

No additional fee is required since this information is filed within 3 months of the filing date.

Respectfully submitted,



Jane E. Gennaro, Reg. No. 34,884
Attorney for Applicant(s)
Tel. 908-685-5205

National Starch and Chemical
10 Finderne Avenue
Bridgewater, New Jersey 08807-0500

October 15, 2001

#45036



SHEET 1 OF 7

Form PTO-1449
(REV. 7/80)

U.S. Department of Commerce
Patent and Trademark Office

Atty. Docket No. 1962.EEM

Serial No.
09/966,453

LIST OF REFERENCES CITED BY APPLICANT
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Applicant: Osama M. Musa

Filing Date: 09/28/01

Group

U.S. PATENT DOCUMENTS

*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	AA	3,493,539	11/13/68	Skouitchi et al	260	47	
	AB	4,428,987	4/28/82	Bell et al	427	327	
	AC	4,448,847	5/28/82	Bell et al	428	413	
	AD	5,122,858	9/10/90	Mahulikar et al	357	70	
	AE	5,449,951	7/1/94	Parthasarathi et	257	677	
	AF	6,225,378 B1	7/1/99	Wang et al	523	454	
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Transla- tion	
							Yes	No
	AL	EP 0 251 490 A2	—	Europe	C0 9J	5/02		
	AM	EP 0 285 266 A2	—	Europe	C0 8J	5/12		
	AN	EP 0 285 266 A3	—	Europe	C0 8J	5/12		
	AO	EP 1 033 590 A2	—	Europe	G02B	1/04		
	AP							

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

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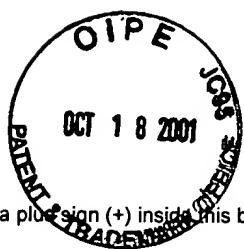
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Form PTO-1449 (REV. 7/80)		U.S. Department of Commerce Patent and Trademark Office		Atty. Docket No. 1962.EEM			Serial No. 09/966,453
LIST OF REFERENCES CITED BY APPLICANT (Use several sheets if necessary)		Applicant: Osama M. Musa					
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	AB						
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FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Transla-tion
							Yes
	AL	Hei 11-[1999]-196,722	07/9/99	Japan			No
	AM	Hei 11-[1999]-195,358	07/9/99	Japan			
	AN	Hei 11-[1999]-285,892	10/06/99	Japan			
	AO	VV M 814/6.76		Germany			
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OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)							
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 3 of 7

Application Number	09/966,453
Filing Date	09/28/01
First Named Inventor	Osama M. Musa
Group Art Unit	
Examiner Name	
Attorney Docket Number	1962.EEM

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item, (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		No author: NORBLOC – Polymerizable UV Stabilizers	—
		FOURNIER, T. et al.: "Femtosecond laser studies of excited state intramolecular proton transfer in an ultraviolet – filter molecule"; Chem. Phys. Lett. 2000, 325 (1,2,3), 171-175 (Eng), Elsevier Science B.V.; CA Selects: Siloxanes & Silicones, Issue 23, 2000	—
		HUNEKE, JAMES T. et al.: "Die Attach Adhesion on Leadframes Treated with Antioxidents"; Oct. 1997 IEEE/CPMT Electronic Packaging Technology Conf.-Singapore	—
		OSTRAUSKAITE, JOLITA et al.: "Synthesis and cationic polymerization of 5-(2,3-epoxypropyl)amino-2-phenyl-1,2,3-benzotriazole"; European Polymer Journal 36 (2000) 2499-2504; Kaunas Univ. of Tech., Kaunas, Lithuania	—
		KIM, TAEK HYEON et al.: "Melt Free-Radical Grafting of Hindered Phenol Antioxidant onto Polyethylene"; Journal of Applied Polymer Science, Vol. 77, 2968-2973 (2000); Kwangju, Korea; John Wiley & Sons, Inc. Pub.	—
		KIM, TAEK HYEON et al.: "Free Radicals Grafting of Hindered Phenol Antioxidants Onto Low Molecular Weight PE"; Polymer Preprints 2000, 41(2), 1237; Kwangju, Korea.	—

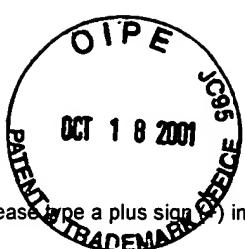
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Sheet 4 of 7

Application Number	09/966,453
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First Named Inventor	Osama M. Musa
Group Art Unit	
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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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		BARTUS, JAN et al.: "Functional Polymers. 63.* Emulsion Copolymerization of Maleimide Type Monomers With Acrylonitrile And Styrene In ABS Latexes"; J.M.S.-Pure Appl. Chem., A36(3), pp. 355-371 (1999); 1999 by Marcel Dekker, Inc.	
		STOEBER, LUTZ et al.: "Functional Polymers. 64. Potassium Ionization Of Desorbed Species (K ⁺ IDS) Of 2(2-Hydroxyphenyl)2H-Benzotriazoles"; J.M.S.-Pure Appl. Chem., A37(11), pp. 1269-1300 (2000); 2000 by Marcel Dekker, Inc.	
		STOEBER, LUTZ et al.: "Functional Polymers 65. Synthesis And Brief Characterization of Surface Active 2(2-Hydroxyphenyl)2H-Benzotriazole Ultraviolet Stabilizers"; J.M.S.-Pure Appl. Chem., A37(9), pp. 943-970 (2000); 2000 by Marcel Dekker, Inc.	
		NO AUTHOR: Graphs: "A Benzotriazole Family"; "p-Polyhydroxystyrene Family"; TriQuest, LP	
		ACS Registry Database Structure Search, 54 Entries, 66 Pages.	
		KIM, H. et al.: "Corrosion protection and adhesion promotion for polyimide/copper system using silane-modified polymeric materials"; Polymer 41 (2000) 6553-6561, Seoul South Korea	
		YU, J. et al.: "Miscibility of Polyimide with Polymeric Primer and Its Influence on Adhesion of Polyimide to the Primed Copper Metal: Effect of Precursor Origin"; Journal of Polymer Science: Part B: Polymer Physics, Vol. 37, 2806-2814 (1999); Pub. John Wiley & Sons, Inc.	

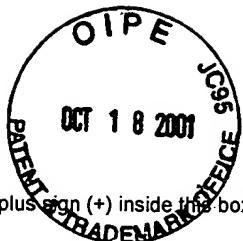
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Application Number	09/966,453
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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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		ISHIDA, H. et al.: "Modified Imidazoles: Degradation Inhibitors and Adhesion Promoters for Polyimide Films on Copper Substrates"; J. Adhesion, 1991, Vol. 36, pp. 177-191; 1991 Gordon and Breach Science Publishers S.A., U.K.	—
		PARTHASARATHI, ARVIND et al.: "Leadframe Treatment To Prevent Delamination In Plastic Packages"; Pub. # 14-115; 1994, 1998 Rogers Corporation.	—
		DAI, QINPIN et al.: "SERS and IR Studies of Polymerization of an Epoxy Compound on Top of Benzotriazole Adsorbed on Copper"; Spectroscopy Letter, 28(1), 43-54 (1995); Marcel Dekker, Inc. 1995	—
		XUE, GI et al.: "Stable SERS Substrates Used for In Situ Studies of the Polymer-Metal Interface at Elevated Temperature"; Macromolecules 1994, 27, 809-813; 1994 American Chemical Society.	—
		POLING, G.W.: "Reflection Infra-Red Studies Of Films Formed By Benzotriazole On Cu*"; Corrosion Science, 1970, Vol. 10, pp. 359 to 370, Pergamon Press, Printed in Great Britain.	—
		XUE, GI et al.: "SERS, XPS, and Electroanalytical Studies of the Chemisorption of Benzotriazole on a Freshly Etched Surface and an Oxidized Surface of Copper"; J. Phys. Chem. 1991, 95, 7380-7384.	—
		YOSHIDA, SHUJI et al.: "A FT-IR Reflection-Absorption Spectroscopic Study of an Epoxy Coating on Imidazole-Treated Copper"; J. Adhesion, 1984, Vol. 16, pp. 217-232; 1984 Gordon & Breach Science Publishers, Inc., U.K.	—

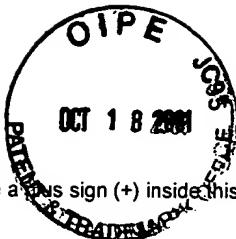
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Sheet 6 of 7

Application Number	09/966,453
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First Named Inventor	Osama M. Musa
Group Art Unit	
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Attorney Docket Number	1962.EEM

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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		MANSFIELD, FLORIAN et al.: Technical Note "Benzotriazole as Corrosion Inhibitor for Copper II. Acid NaCl Solutions"; Corrosion-Nace, North American Rockwell Science Center, Thousand Oaks, CA; Submitted for publication August, 1972.	—
		VOGT, JURGEN : "Thermoset Matrices for Structural Adhesives: Imidazole-Catalysed Curing of Epoxy Resins"; J. Adhesion, 1987. Vol. 22, pp. 139-151, 1987 Gordon & Breach Science Publishers, Inc., U.K.	—
		CHO, KILWON et al.: "Effect of the microstructure of copper oxide on the adhesion behavior of epoxy/copper leadframe joints"; J. Adhesion Sci. Technol, Vol. 14, No. 11, pp. 1333-1353 (2000).	—
		LEE, H. Y. : "Failure paths of the Cu-based leadframe/EMC joints"; Materials Science and Engineering A311 (2001) 217-225; 2001 Elsevier Science B.V.	—
		CHONG, CHAI TAI et al.: "Investigation on the Effect of Copper Leadframe Oxidation on Package Delamination"; 1995 IEEE.	—
		HUANG, YIZHE ELISA et al.: "Effect Of Solder Reflow Temperature Profile On Plastic Package Delamination"; 1998 IEEE/CPMT Int'l Electronics Manufacturing Technology Symposium.	—
		KANG, TECK-GYU et al.: "Characterization of Oxidized Copper Leadframes and Copper/Epoxy Molding Compound Interface Adhesion in Plastic Package"; 1998 IEEE.	—

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		SCHMIDT, R. et al.: "Investigation of the Adhesion Strength between Molding Compound and Leadframe at Higher Temperatures"; 1998 IEEE/CPMT Electronics Packaging Technology Conference.
		GAILLARD, F. et al.: "Grazing-angle Micro-FTIR Spectroscopy (GAM-FTIR): Applications to Adhesion Studies"; Surf. Interface Anal. 27, 865-870 (1999); John Wiley & Sons, Ltd.
		ALPERN, P. et al.: "A simple model for the mode I popcorn effect for IC packages"; Microelectronics Reliability 40 (2000) 1503-1508; 2000 Elsevier Science Ltd. All rights reserved.
		YU, SHAN-PU et al.: "The Adhesion Strength of A Lead-Free Solder Hot-Dipped on Copper Substrate"; Journal of ELECTRONIC MATERIALS, Vol. 29, No. 2, 2000.
		H. DEBONTRIDE et al.: "Study of chromating layers on zinc coated steel using FTIR and Raman spectroscopies: application to adhesion properties"; La Revue de Metallurgie-CIT Science et Genie des Materiaux, March 1995.

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